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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,609

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EXAMINER

SUTHERS, DOUGLAS JOHN

ART UNIT

PAPER NUMBER

2614

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,609	Applicant(s) WILLEMS, STEFAN MARGHEURITE JEAN	
	Examiner Douglas J. Suthers	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
 4a) Of the above claim(s) 3 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7 and 9-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2614.

Election/Restrictions

Applicant's election without traverse of species I in the reply filed on November 26th, 2008 is acknowledged. Applicant will find claim 3 as well as the proposed claim 8 does not fit such species, therefor are considered withdrawn and are not addressed in this action.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: figure 4 contains items 909, 906, 902 and 905 not found in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37

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CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: page 9 line 33 refers to "mean calculation block 903" which should most likely be "mean calculation block 902". Similarly page 10 line 2 refers to "mean calculation block 904" which should most likely be "mean calculation block 905".

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim 11 is objected to because of the following informalities: the claim ends in a semicolon instead of a period. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 6-10, 15-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 6-10 and 15, the specification discloses that the invention may be "realized using software" (page 3 lines 12-15) . Since the elements recited in claims 6-10 and 15-17 could have been software elements which are pertain to non-statutory subject matter and thus render these claims non-statutory.

Regarding claim 16, the claim pertains to a computer program product directly loadable into memory which is not statutory subject matter.

Claim 17 is rejected under 35 U.S.C. 101 because the claimed data file is non-functional descriptive material and thus considered non-statutory subject matter. Also, The claim is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only.

Claims 1-4 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent¹ and recent Federal Circuit decisions² indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claim recites a series of steps or acts to be performed, the claim neither transforms underlying subject matter nor is positively tied to another statutory category that accomplishes the claimed method steps, and therefore does not qualify as a statutory process. For example the method of processing sound signals including the step of varying the delay is of sufficient breadth that it would be reasonably interpreted as a series of steps completely performed mentally, verbally or without a machine.

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

¹ *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

¹ *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

² *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5-7, 9-11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US 4308423).

Regarding claim 1, Cohen discloses a method for processing sound signals for a surround left channel (figure 4, left output) and a surround right channel (right output), wherein a continually varying delay between the resulting signals of the surround right and surround left channels is generated (via items 136 to 142).

Although Cohen does not expressly disclose the use of surround channels, it would have been obvious to perform the method on the surround signals as well. The motivation to use such would have been to allow for quadrasonic spacialization. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to perform the method on surround signals.

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Regarding claim 2, Cohen discloses wherein the continually varying delay is generated so that the signals of the left and right surround channels are decorrelated at all times (continuously varied delay decorrelates).

Regarding claim 5, although Cohen does not expressly disclose storing the signals along with video signals, the examiner takes official notice that storing of processed audio signals along with corresponding video was well known in the art. The motivation to do so would have been to allow for pre-processing of the audio so that processing is not necessary on each replay, and allow for all channels of multimedia, such as movies, to be stored on the same media for convenience. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to further comprise wherein the delayed surround channels are stored together with associated sound and/or video channels in a storage media for later use.

Regarding claim 6, Cohen discloses a delay management unit (figure 4, items 142, 100, 100', R1, R2, R5) for a right channel (right output) and a left channel (left output) of a stereo channel with a number of variable delay units (138, 96, 96') to provide a continually varying delay between the signals of the right channel and the left channel.

Although Cohen does not expressly disclose the use of surround channels, it would have been obvious to perform the method on the surround signals as well. The motivation to use such would have been to allow for quadrasonic spacialization.

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Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to perform the method on surround signals.

Regarding claim 7, Cohen discloses a control signal generator (142) with a control signal output (output of 142) connected to the variable delay unit (138) in such a way as to yield the continually varying delay.

Although Cohen does not expressly disclose delay units for each channel, it would have been obvious to do so. The motivation to do so would have been to allow for image separation from other channels such as the center channel. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to include delay units for each channel.

Regarding claim 9, Cohen discloses where the control signal generator comprises a signal source (R5) and a signal modifier arrangement (142) which together provide control input for the delay unit (138).

Regarding claim 10, Cohen discloses sound processing system (figure 4) comprising a delay management unit according to claim 6.

Regarding claim 11, Cohen discloses acoustic system (figure 4), said system comprising:

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a source of a number of distinct sound channels including a left channel (left input) and a right channel (right input);

an sound processing system (figure 4) according to claim 10 for processing the sound channels; and

a number of loudspeakers (figure 2, items 52 and 54) for converting the processed sound channels into audible sound.

Although Cohen does not expressly disclose the use of surround sound signals, the examiner takes official notice that the use of surround sound signals was well known in the art. The motivation to use such would have been to allow for quadrasonic sound. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to it would have been obvious to further comprise surround signals.

Regarding claim 15, Cohen discloses a studio system (figure 4) comprising a sound processing system according to claim 10.

Claims 4 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US 4308423) and Fosgate (US 5199075).

Regarding claim 4, Cohen does not disclose mixing or the makeup of the speakers.

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Fosgate discloses wherein a surround left channel (figure 4, LB) and a surround right channel (RB) are mixed with other sound channels (LF and RF) and forwarded to a number of loudspeakers (11-16) in such a way as to yield sound output signals with a directional arrangement of dipole loudspeaker lobes (lobe direction shown by arrows).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mixing and speakers of Fosgate in the system of Cohen. The motivation for doing so would have been to use a previously designed speaker and layout in order to reduce engineering costs. Therefore, it would have been obvious to combine Fosgate with Cohen to obtain the invention as specified in claim 4.

Regarding claim 12, Cohen does not disclose mixing or the makeup of the speakers.

Fosgate discloses where the number of loudspeakers (11-16) are arranged to form an array and where the sound processing system comprises a mixing unit (27-29) for mixing sound input channels to give sound output channels (to 30 and 31), and forwarding sound output channels to the loudspeakers in such a way as to yield a directional arrangement of dipole loudspeaker lobes for the sound input channels (lobe direction shown by arrows).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mixing and speakers of Fosgate in the system of Cohen. The motivation for doing so would have been to use a previously designed speaker and

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layout in order to reduce engineering costs. Therefore, it would have been obvious to combine Fosgate with Cohen to obtain the invention as specified in claim 4.

Regarding claim 13, Cohen discloses a delay management unit (figure 4, items 142, 100, 100', R1, R2, R5) according to claim 6 to generate a continually varying delay between the surround right and surround left channels.

Cohen does not disclose mixing or the makeup of the speakers.

Fosgate discloses mixing unit (figure 4, items 27-29) for a sound processing system with a number of distinct sound channels including a surround left channel (LB) and a surround right channel (RB) comprising:

line inputs (2, 4, 6, and 8) for the sound channels;

line outputs (3 and 7) for connection to loudspeakers (11-16);

a means for mixing the sound channels (27-29) to give sound output channels in such a way as to yield a directional arrangement of dipole loudspeaker lobes (lobe direction shown by arrows) and

forwarding the sound output channels (30 and 31) to the line outputs (3 and 7).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the mixing and speakers of Fosgate in the system of Cohen. The motivation for doing so would have been to use a previously designed speaker and layout in order to reduce engineering costs. Therefore, it would have been obvious to combine Fosgate with Cohen to obtain the invention as specified in claim 13.

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Regarding claim 14, Cohen discloses comprising a user-configurable delay arrangement (figure 4, items 142, 100, 100', R1, R2, R5) for delaying the signals of the different sound channels with respect to each other in such a way as to direct dipole loudspeaker lobes for at least some of the sound channels (left) by choosing suitable delay scale values.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas J. Suthers whose telephone number is (571)272-0563. The examiner can normally be reached on Monday-Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Douglas J Suthers/
Examiner, Art Unit 2614

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614